



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants: David R. Payne, Gerald A. Stangl,  
Norman E. Stevens, Jr., and Michael F. Gard

Serial No.: 10/617,975

Filed: July 12, 2003

For: SYSTEM AND METHOD FOR  
AUTOMATICALLY DRILLING  
AND BACKREAMING A  
HORIZONTAL BORE  
UNDERGROUND

Group No.: 3671

Examiner: Raymond W. Addie

Att'y Dkt. No. 082380-0561

Date: May 21, 2005

**APPELLANTS' BRIEF**

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ATTACHMENT A: Office action dated January 21, 2005.

## **I. REAL PARTY IN INTEREST**

The real party in interest in this application is The Charles Machine Works, Inc. ("CMW"), an Oklahoma corporation having a principal place of business at 1959 W. Fir Avenue, Perry, Oklahoma 73077. CMW is the sole owner by assignment of the instant application.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

## **III. STATUS OF CLAIMS**

Claims 1-3 are withdrawn.

Claims 4-12 are rejected.

## **IV. STATUS OF AMENDMENTS**

No amendments have been filed subsequent to final rejection of the claims of this application. Appellant understands the claims to read as they did on January 1, 2005, the mailing date of the final Office action.

## **V. SUMMARY OF THE INVENTION**

Independent claim 4 of the present invention is directed to a method for automatically backreaming a horizontal borehole. The method comprises automatically rotating and pulling (2002) a drill string (22) having a backreamer (24) through the horizontal borehole and automatically reducing a length of the drill string (2008). Page 34, lines 5-17. The method also comprises automatically reducing a rate of pullback (2014) if a rotation pressure on the drill string is greater than a predetermined limit (2012). Page 34, lines 18-21. Further, the method comprises automatically reducing the rate of pullback (2026) if a rotation speed of the drill string is less than a predetermined limit (2028). Page 35, lines 5-12. Claims 5-12 depend from claim 4.

Claim 5 depends directly from claim 4 and adds the step of attaching a utility line to the backreamer. Page 33, lines 14-15.

Dependent claim 6 adds automatically recording the actual location of the utility line as the utility line is automatically pulled through the borehole to the method of claim 5. Page 33, lines 19-21.

Dependent claim 7 adds increasing the rate of pullback (2024) if the rotation pressure is less than the predetermined limit (2012), the rotation speed of the drill string is greater than a predetermined limit (2020), and the product tension at the backreamer is less than a predetermined limit (2022) to the method of claim 4. Page 34, line 24-Page 35, line 4.

Dependent claim 8 further discloses that the rate of pullback in claim 7 may be increased by five percent (5%) (2024) if the rotation pressure is less than the predetermined limit (2012), the rotation speed of the drill string is greater than the predetermined limit (2020), and the product tension at the backreamer is less than the predetermined limit (2022). Page 34, line 24-Page 35, line 4.

Dependent claim 9 discloses that the rate of pullback in claim 4 may be reduced by twenty percent (20%) (2014) if the rotation pressure is greater than the predetermined limit (2020). Page 34, lines 19-21.

Claim 10 depends from claim 4 and discloses that the rate of pullback may be reduced by ten percent (10%) (2026) if the rotation speed of the drill string is less than a predetermined limit (2028). Page 35, lines 5-8.

Claim 11 depends directly from independent claim 4 and adds automatically reducing a rate of pullback (2026) if rotation speed of the drill string is within a predetermined range (2020 and 2028) and a product tension at the backreamer is greater than a predetermined limit (2022 and 2030). Page 35, lines 5-12.

Claim 12 depends directly from independent claim 4 and further defines the step of automatically reducing a length of the drill string (2008) as comprising automatically removing a pipe section from the drill string. Page 34, lines 10-17.

## VI. ISSUES

A. Are claims 4-12 unpatentable under 35 U.S.C. § 103(a) as rendered obvious by the combination of U.S. Patent No. 5,883,015, issued to Hesse et al. and U.S. Patent No. 6,308,787, issued to Alft?

## VII. GROUPING OF CLAIMS

For the purposes of this appeal only, Appellants state all claims stand or fall with claim 4. If claim 4 is rejected, then all are rejected.

## VIII. ARGUMENT

### (i) 35 U.S.C. § 112, First Paragraph Rejections.

This appeal concerns no § 112, first paragraph rejections.

### (ii) 35 U.S.C. § 112, Second Paragraph Rejections.

This appeal concerns no § 112, second paragraph rejections.

### (iii) 35 U.S.C. § 102 Rejections.

This appeal concerns no § 102 rejections.

### (iv) 35 U.S.C. § 103 Rejections.

The Examiner rejected claims 4-12 under § 103(a), as being unpatentable over Hesse et al. (U.S. 5,833,015) in view of Alft (U.S. 6,308,787). Appellants submit that claims 4-12 are patentable over the cited prior art and the Examiner's rejection is without merit.

A. **The combination of Hesse and Alft cannot support a *prima facie* showing of obviousness because they do not enable one skilled in the art to use the claimed method.**

#### 1. Summary of the Examiner's Rejections.

The Examiner rejected claims 4-12 under 35 U.S.C. § 103(a) as rendered obvious by U.S. Patent No. 5,833,015, issued to Hesse et al. ("Hesse") in view of U.S. Patent No. 6,308,787 issued to Alft ("Alft"). Reversal of the § 103(a) rejection in view of Hesse and Alft is respectfully requested.

As the basis for these rejections, the Examiner has relied on Hesse in combination with Alft to support a claim of obviousness. To make a claim of obviousness, the Examiner has a burden of establishing a *prima facie* case of obviousness. M.P.E.P. 2142. To establish a *prima facie* case of obviousness, the prior art reference must teach or suggest all of the claim limitations. M.P.E.P. 2143. However, the prior art must be enabling so that one skilled in the art can make and use the apparatus or method. See Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1551, 13 U.S.P.Q.2d 1301, 1304 (Fed. Cir. 1989) and Ex Parte Ronald H. Nelson et al., 2000 WL 33534688 (Bd.Pat.App & Interf.). In the present case, Hesse does not disclose how to automatically reduce a length of the drill string, and Alft does not enable one of ordinary skill to do so. Thus, a *prima facie* case of obviousness as to claim 4 has not been made and the § 103(a) rejection must be overturned.

## **2. Appellants' Invention**

Independent claim 4 is directed to a method for backreaming a horizontal borehole. The method comprises automatically rotating and pulling a drill string (22) having a backreamer through the horizontal borehole (2010). The method of claim 4 also comprises the step of automatically reducing a length of drill string (22). The method further comprises automatically reducing a rate of pullback (2012) if a rotation pressure on the drill string is greater than a predetermined limit (2014). Further still, the method comprises automatically reducing the rate of pullback (2026) if a rotation speed of the drill string is less than a predetermined limit (2028).

Accordingly, the preferred method of the present invention is directed to a horizontal directional drilling (hereinafter "HDD") backreaming operation. In a typical HDD operation a pilot borehole is created by pushing a drill bit horizontally through the ground. The drill bit is supported at the end of a string of drill pipe sections. The drill string is generally made up of individual drill pipe sections connected end to end. As the drill bit is pushed through the ground, drill pipes are added, or "made up," one by one to extend the length of the drill

string. The make-up operation consists of connecting the box joint of a pipe section to the pin joint of a similarly constructed drill pipe. When the drill bit reaches its destination point the pilot boring operation is completed and the backreaming operation may begin.

To begin the reaming operation, the operator removes the drill bit from the end of the drill string and connects a backreamer in its stead. The backreamer is pulled back through the borehole to enlarge the pilot bore for installation of a utility line or product pipe. Appellants' invention requires the operator to establish a predetermined rotation pressure limit and a predetermined rotation speed of the drill string for the backreaming operation. These limits are based upon factors such as soil composition, bend radius of the drill pipe, and elasticity of the utility line or product pipe being pulled into the borehole behind the backreamer.

After the limits for rotation pressure and speed have been established, automatic pullback and rotation of the drill string and backreamer through the horizontal borehole is started. As the drill string is pulled back through the borehole it becomes necessary to remove pipe sections from the drill string. As will be discussed in more detail below, Appellants' method automatically removes a length of drill pipe from the drill string without the need for operator intervention. Appellants' method also includes the steps of automatically reducing the rate of pullback if the rotation pressure on the drill string is greater than the predetermined limit; and automatically reducing the rate of pullback if the rotation speed of the drill string is less than the predetermined limit. Each step of Appellants' method is automated and does not require intervention by the operator.

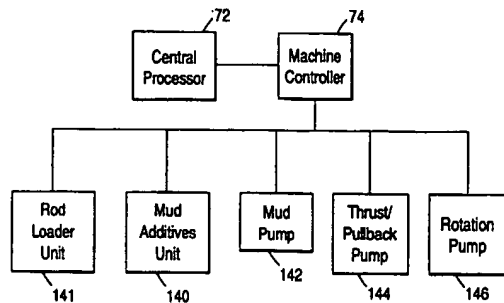
**3. Hesse does not disclose automatically reducing a length of the drill string as required in Appellants' claim 4.**

Hesse is directed to a system for monitoring the pulling force exerted on a product being pulled into the borehole behind a backreamer. Hesse teaches using the measurement of tension force on a product pipe to control forward advance and rotational speed of the expansion drill bit. See Hesse, col. 4, ll. 18-22. Hesse also teaches that the tension force measurements can be used by an automatic control of drive 1 to control the advance and rotation speed of the drill

bit. See *id.* at 23-25. However, as noted by the Examiner, Hesse does not teach automatically reducing the length of the drill string, as required by Appellants' claim 4. See Examiner's Action mailed July 2, 2004, at 3.

**4. Alft does not teach how to automatically reduce the length of a drill string.**

As discussed above, the Examiner recognized that Hesse does not teach automatically reducing a length of the drill string, and cited the Alft patent as teaching that feature. See Examiner's Action mailed July 2, 2004, at 3. The Alft patent describes a horizontal directional drilling system having a drilling machine, a drill string, a drive system, a plurality of



*Fig. 7*

sensors, and a central processor. With reference to Figure 7 of Alft, Alft teaches that a central processor 72 sends control signals to a machine controller 74. The machine controller 74 purportedly controls operation of a rod loader unit 141. The rod loader unit 141 is used to control an automatic rod loader apparatus. Alft does not teach the necessary sensors or control logic needed

to process information from the sensors and activate the mechanical devices used to reduce a length of drill string. With regard to the rod loader unit 141, Alft states only:

A pipe loading controller 141 may be employed to control an automatic rod loader apparatus during rod threading and unthreading operations . . . .

The machine controller 74 also controls rotation pump movement when threading a length of pipe onto a drill string 180, such as by use of an automatic rod loader apparatus of the type disclosed on commonly assigned U.S. Pat. No. 5,556,253, which is hereby incorporated by reference in its entirety.

See Alft, col. 30, ll. 30-32 and 56-61. Alft's mention of its desire to automatically reduce a length of drill string does not render Appellants' claims obvious. Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 381 F.3d 1371 (Fed. Cir. 2004) (recognition of a problem to be solved by



a reference does not render the solution obvious). Because Alft does not solve the problem of how to automatically reduce a length of drill string, one skilled in the art would not consult this reference.

The Rozendall Patent, incorporated by reference in Alft, does not cure the failings of Alft. Alft incorporated U.S. Patent No. 5,556,253, issued to Rozendall, by reference to teach the use of an automatic rod loader apparatus. Alft, col. 30, ll. 56-61. Rozendall is directed to an automatic pipe loading device 24 which includes a magazine 26 containing a plurality of pipes. See Rozendall, col. 2, ll. 48-50. Rozendall describes only the mechanical device used to load and unload pipes. Rozendall allows the operator to load pipe sections without requiring the operator to physically pick-up and load the pipe onto the machine. However, the operator still must operate levers and controls that assist the operator to perform the steps of loading the pipe. Rozendall does not describe a controller or automatic controls that automate the pipe-handling process so that the need for operator interaction is eliminated. Like Alft, one skilled in the art would not consult Rozendall to learn how to automatically reduce a length of the drill string.

Because the Examiner failed to provide a reference that one of skill in the art would consult to solve the problem of automatically reducing a length of drill string, the Examiner has failed to make a *prima facie* showing of obviousness. Consequently, the § 103(a) rejection of claim 4 must be overturned.

#### **5. Claims 5-12 are patentable over Hesse and Alft.**

Claims 5-12 all depend directly or indirectly from claim 4 and they should be allowed when claim 4 is allowed. Each of these dependent claims includes the patentable features of claim 4. As claim 4 has been demonstrated to be patentable over the combination of Hesse and Alft, then dependent claims 5-12 are likewise patentable. Consequently, the § 103(a) rejection of claims 5-12 must be overturned.

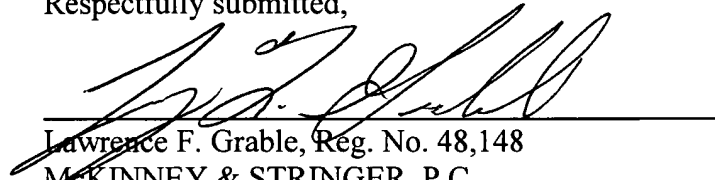
#### **(v) Other Rejections.**

This appeal concerns no other rejections.

**IX. CONCLUSION**

Appellants respectfully requests the Board overturn the rejections of claims 4-12, under 35 U.S.C. § 103(a), and that a notice of allowance be issued.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Lawrence F. Grable", is written over a horizontal line.

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## CLAIMS ON APPEAL

4. A method for backreaming a horizontal borehole, the method comprising:  
automatically rotating and pulling a drill string having a backreamer through the  
horizontal borehole;  
automatically reducing a length of the drill string;  
5 automatically reducing a rate of pullback if a rotation pressure on the drill string is  
greater than a predetermined limit; and  
automatically reducing the rate of pullback if a rotation speed of the drill string is  
less than a predetermined limit.
5. The method of claim 4 further comprising attaching a utility line to the  
backreamer.
6. The method of claim 5 further comprising automatically recording the  
actual location of the utility line as the utility line is automatically pulled through the borehole.
7. The method of claim 4 further comprising increasing the rate of pullback  
if the rotation pressure is less than the predetermined limit, the rotation speed of the drill string is  
greater than a predetermined limit, and the product tension at the backreamer is less than a  
predetermined limit.
8. The method of claim 7 wherein the rate of pullback is increased by five  
percent if the rotation pressure is less than the predetermined limit, the rotation speed of the drill  
string is greater than the predetermined limit, and the product tension at the backreamer is less  
than the predetermined limit.
9. The method of claim 4 wherein the rate of pullback is reduced by twenty  
percent if the rotation pressure is greater than the predetermined limit.

10. The method of claim 4 wherein the rate of pullback is reduced by ten percent if the rotation speed of the drill string is less than a predetermined limit.

11. The method of claim 4 further comprising automatically reducing a rate of pullback if the rotation speed of the drill string is within a predetermined range and a product tension at the backreamer is greater than a predetermined limit.

12. The method of claim 4 wherein the step of automatically reducing a length of the drill string comprises automatically removing a pipe section from the drill string.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,975	07/12/2003	David R. Payne	82380-00661 <i>005101</i>	4897
28839	7590	01/21/2005	EXAMINER	
MCKINNEY & STRINGER, P.C. 101 N. ROBINSON OKLAHOMA CITY, OK 73102			ADDIE, RAYMOND W	
			ART UNIT	PAPER NUMBER
			3671	
DATE MAILED: 01/21/2005				



Please find below and/or attached an Office communication concerning this application or proceeding.

ATTACHMENT "A"

**Office Action Summary**



Application No.

10/617,975

Applicant(s)

PAYNE ET AL.

Examiner

Raymond W. Addie

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hesse et al. # 5,833,015 in view of Aft # 6,308,787 B1.

Hesse et al., discloses a method for drilling and backreaming a horizontal bore hole, the method comprising:

Automatically rotating and pulling a drill string (3), having a backreamer (5) through the horizontal borehole.

Automatically reducing a rate of pullback if a rotation pressure on the drill string is greater than a predetermined limit.

Automatically reducing the rate of pullback if a rotation speed of the drill string is less than a predetermined limit.

Increasing the rate of pullback if the rotation pressure is less than the predetermined limit, increasing the rotation speed of the drill string is greater than a predetermined limit, and the product tension at the backreamer (24) is less than a predetermined limit.

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Attaching a utility line(8) to the backreamer after the boring tool (26) has exited the earth at location (24).

See Hesse et al. Col. 3, ln. 50-col. 5, ln. 23.

What Hesse et al. does not disclose is automatically reducing the length of the drill string.

However, Alft teaches a method of operating a horizontal boring machine having an automated drill string (22), which can be lengthened or shortened automatically or manually, by removing a pipe section from the drill string, either automatically or manually. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of forming a bore hole, of Hesse et al., with the method of automatically lengthening or shortening the drill string when the drill string needs to be lengthened or shortened, as taught by Alft et al., in order to maximize boring efficiency. See Alft col. 12, lns 5-20.

In regards to claim 6, Hesse et al. discloses it is desirable to pull a utility line through a borehole, by attaching the utility line (8) to a drill head (5), and to transmit operational data from the bore head to the drilling machine to maximize boring efficiency. What Hesse et al. does not disclose is recording the actual location of the utility line as the utility line is automatically pulled through the borehole via a transmission line disposed within the drill string.



However, Alft discloses it is known to track the position of a drill head (24) in real time, using a sonde-type transmitter and remote control unit that uses a traditional methodology for locating the drill head. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of backreaming a borehole of Hesse et al. with the method of tracking the drill head, as taught by Alft, in order to continuously determine and record the location of the utility line, connected to the drill head. See col. 12, Ins.10-41, col. 16, Ins. 16-29.

In regards to Claims 8-11 although neither Hesse et al., nor Alft explicitly recite reducing the rate of pullback of the drill string by a certain percentage; both Hesse et al., and Alft does disclose that the rate of pull-back can be reduced or terminated based upon whether the rotation speed, rotation pressure(torque) of the drill string, or the product tension (lubricating mud pressure) is above or below a pre-determined level. Hence, it would be obvious that the amount of reduction required could be correlated to a specific percentage of the current rate of pull back of the drill string. See col. 44.

### ***Response to Arguments***

2. Applicant's arguments filed 11/05/04 have been fully considered but they are not persuasive.

Applicant argues in favor of Independent Claim 4 by stating "Each step of the method claim requires automatic operation of the step, without human intervention".

Applicant then suggests "The Hesse reference...also mentions the measurements could be provided to an automatic control, but the reference lacks any disclosure of structure for an automatic control device or how to automatically control the drive...the Hesse reference also does not disclose automatically reducing the length of the drill string, as is required by Applicants' present invention".

Applicant then suggests "Alft broadly suggests that the processor may operate parts of the drilling system...Alft does not, however, adequately describe or teach the operation of the processor to control a pipe handling system to automatically reduce the length of the drill string when the drill string must be shortened".

Applicant then states "Alft also states the machine controller 74 also controls rotation pump movement when threading a length of pipe onto a drill string 180 such as by use of an automatic rod loader apparatus of the type disclosed in commonly assigned U.S. Patent No. 5,556,253, which is hereby incorporated herein by reference in its entirety".

However, the Examiner does not concur.

An incorporation by reference in the arguments is not afforded the same benefit as an incorporation by reference in the specification. Applicant's specification does not incorporate 5,556,253 to Rozendaal et al.

Further, if the reference were incorporated by reference, and the reference does not teach "a controller or any automatic control" as argued, it is unclear as to how Applicants' method is performed by Applicant invention.

Applicant's further incorporation by reference of U.S. Patent No. 6,179,065 also

is made only in the arguments and not in the specification, and hence is not afforded the same benefit.

Further, Applicant's admission that "Alft broadly suggests that the processor may operate parts of the drilling system...Alft state 'a pipe loading controller 141 may be employed to control an automatic rod loader apparatus during rod threading and unthreading operations...See col. 30, Ins. 30-32"; clearly shows Alft reasonably suggests automatic control of shortening the drill string by unthreading adjoined drill string sections. Hence, it is obvious the combined teachings of Hesse in view of Alft teach a method of automatically backreaming a horizontal borehole including the step of automatically reducing a length of the drill string by automatically removing a pipe section from the drill string by unthreading adjoined drill string sections.

Therefore the argument is not persuasive and the rejection is maintained.

Applicant then argues in favor of dependent claims 5-11 by indicating that they "depend from claim 4 and include all the limitations thereof...these claims are also allowable over Hesse and Alft and the rejection of claims 5-11 should also be withdrawn".

However, the Examiner does not concur because; Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond W. Addie whose telephone number is 703 305-0135. The examiner can normally be reached on 8-2, 6-8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on 703 308-3870. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas Will  
Supervisory Patent Examiner  
Group 3600

RWA  
1/18/05



PTO/SB/21 (08-03)  
Approved for use through 08/30/2003. OMB 0651-0031  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/617,975	
	Filing Date	July 12, 2003	
	First Named Inventor	David R. Payne	
	Art Unit	3671	
	Examiner Name	Raymond W. Addie	
Total Number of Pages in This Submission	65	Attorney Docket Number	082380-00561

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form  <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment/Reply  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Response to Missing Parts/Incomplete Application  <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert a Provisional Application  <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication To a Technological Center (TC)  <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences  <input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)  <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below)  A pre-addressed postcard.
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual	Lawrence F. Grable, Esquire 101 North Robinson, Suite 1300 Oklahoma City, Oklahoma 73102
Signature	
Date	June 17, 2005

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal with sufficient postage as first class mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date: <u>June 17, 2005</u> .			
Typed or printed	Lawrence F. Grable, Esquire		
Signature		Date	June 17, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.  
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

# 01 FEE TRANSMITTAL

## For FY 2005

JUN 21 2005

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 500.00

### Complete if Known

Application Number	10/617,975
Filing Date	July 12, 2003
First Named Inventor	David R. Payne
Examiner Name	Raymond W. Addie
Art Unit	3671
Attorney Docket No.	082380-00561

### METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_  
☒ Deposit Account Deposit Account Number: 13-2493 Deposit Account Name: McKinney & Stringer, P.C.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee  
☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

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### FEE CALCULATION

#### 1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Small Entity	Small Entity	Small Entity	Small Entity	Small Entity	Small Entity	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

#### 2. EXCESS CLAIM FEES

Fee Description	Small Entity	Small Entity
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180
<b>Total Claims</b>	<b>Extra Claims</b>	<b>Fee (\$)</b>
- 20 or HP =	x	=
HP = highest number of total claims paid for, if greater than 20		
<b>Indep. Claims</b>	<b>Extra Claims</b>	<b>Fee (\$)</b>
- 3 or HP =	x	=
HP = highest number of total claims paid for, if greater than 3		

#### 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 =	/ 50 =	(round up to a whole number)	=	

#### 4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other: Appeal Brief

Fees Paid (\$)

500.00

### SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 48,148	Telephone 405/272-1906
Name (Print/Type)	Lawrence F. Grable, Esquire		Date June 17, 2005

This collection of information is required by 37 CFR 1.36. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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